

New Species of *Bulbophyllum*, Sections *Macrouris* and *Pelma* from New Guinea (Orchidaceae)

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Abstract

New taxa of *Bulbophyllum* (Orchidaceae) belonging to the sections *Macrouris* and *Pelma* are described. All originate from New Guinea.

While revising the sections *Macrouris* and *Pelma* of the genus *Bulbophyllum* (Orchidaceae) a number of species were found to be new. These species are described here. The complete revision will be published in the periodical 'Orchid Monographs'.

Sect. *Macrouris* Schltr.

Bulbophyllum cateorum J. J. Vermeulen, *spec. nov.*

Fig. 1

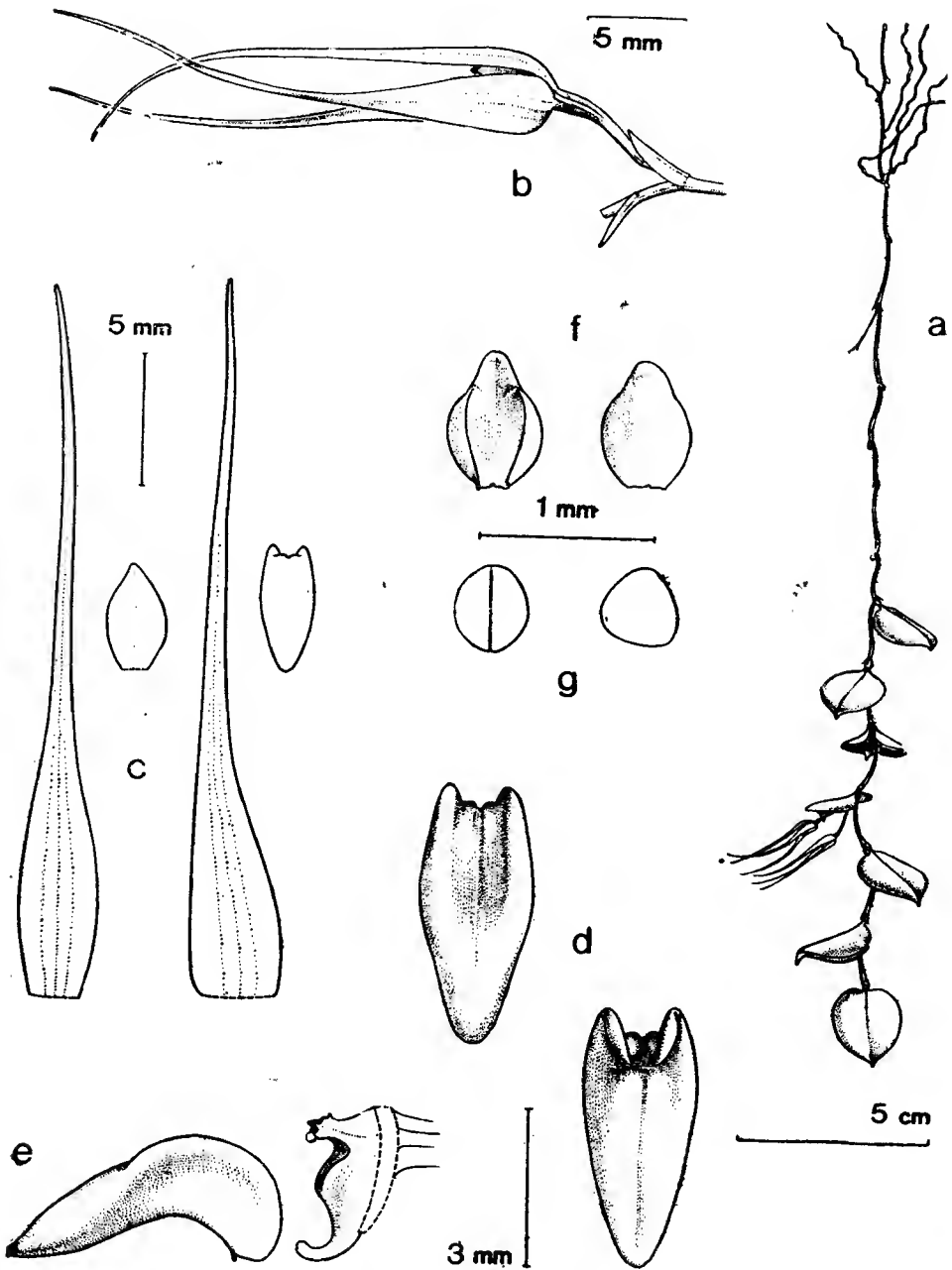
Bulbophyllo cardiophyllo J. J. Vermeulen
affine, sed inflorescentia 1-2-flora
differt.-Typus: *Jongejan* 1236 (L).

Rhizome hanging down perpendicularly, up to 70 cm, long, flattened and winged, largest diam. 0.8-1.5 mm; rhizome scales of the longest internodes distinctly shorter than those interarticulations leaving large portions of the rhizome bare. Roots mostly close to the base of the rhizome. Pseudobulbs cylindrical, 1.2-3.5 cm apart, 0.1-0.35 × 0.08-0.15 cm, not flattened. Petiole 0.8-1.5 mm long. Leaf blade ovate to elliptic, base cordate, 0.8-2.5 × 0.7-1.8 cm, index 1.1-2, tip acuminate. Inflorescence 3.5-5 cm, 1-2-flowered. Peduncle 1.8-2 cm; bracts c. 3, the longest 3.5-5 mm. Rhachis 0.2-0.4 cm.

Floral bracts triangular, 2.8-4 mm, tip acuminate. Pedicel and ovary 4.5-7 mm, with the articulation 1.3-2 mm from the floral bract. Flowers open simultaneously, moderately opening. Median sepal ovate, 22-28 × 3 mm, index 7-10; tip long acuminate to caudate, thin, glabrous. Lateral sepals free, oblique, triangular, 22-28 × 3 mm, index 7-10, otherwise as the median sepal. Petals elliptic, c. 4 × 2.5 mm, index c. 1.6, tip acute, thin, glabrous. Lip curved, general outline ovate, c. 4.5 × 2 mm, index c. 1.6 (not spread), tip obtuse, thick but soft, glabrous; adaxially concave near the base, abaxially with an inconspicuous, retuse median ridge. Column from ovary to the tip of the stolidia c. 1.3 mm; stigma protruding at its base, triangular; column-foot without accessories. Stolidia inconspicuous, triangular, tip acute, with a small, subacute tooth along the upper margin. Anther abaxially with a ridge towards its tip, front margin protruding. Pollinia 2.

Colours: Sepals white or pinkish. Lip dark purple at the tip.

Ecology: Epiphyte in primary forest, or on isolated trees in open vegetation.



1 *Bulbophyllum cateorum* a-whole plant; b-flower; c-flower analysis, from left to right: median sepal, petal, lateral sepal, lip; d-lip, above: adaxially, below: abaxially; e-column and lip, lateral view; f-anther, left: adaxially; right: abaxially; g-pollinia, left: a pair, right: single. (All drawn from the type specimen).

New species of *Bulbophyllum*

Alt. 1750-2500 m. Flowering observed in April, September.

Distribution: INDONESIA. Irian Jaya. Wissel Lake area (*Eyma* 4843). PAPUA NEW GUINEA. Eastern Highl. Prov., Goroka (*Jongejan* 1936); Warrapuri R. NGF 18134 (Van Royen); Lufa. (*Jongejan* 3078).

Notes: Most similar to *B. cardiophyllum* J. J. Vermeulen, different in the 1-2-flowered inflorescences. The floral bracts are distinctly shorter than the pedicel plus ovary, and the lip is shorter and wider.

Bulbophyllum phormion J. J. Vermeulen, *spec. nov.* **Fig. 2**

Bulbophyllo dendrochiloide Schltr. affine, sed labello carnosio differt.-Typus: *Cruttwell* 3180 (L).

Rhizome creeping but sometimes with the most recently developed parts patent or pendulous, 0.8-1 mm diam.; rhizome scales of the longest internodes distinctly shorter than those interarticulations, leaving large portions of the rhizome bare. Roots in tufts below most pseudobulbs. Pseudobulbs ovoid to discoid, 0.5-3.2 cm apart, 0.2-0.8 × 0.1-0.6 cm, not or hardly flattened. Petiole 1-15 mm long. Leaf blade elliptic, 0.7-4 × 0.25-0.8 cm, index 1.6-10, tip obtuse to acute. Inflorescence 2-17 cm, 2-10-flowered. Peduncle 1.7-9.5 cm; bracts 3-5, the longest 2-6 cm. Rhachis erect, 0.3-6 cm. Floral bracts ovate to triangular, 1.2-3 mm, tip acute. Pedicel and ovary 2-13 mm, with the articulation 0.3-0.8 mm from the loral bract. Flowers open simultaneously, moderately opening. Median sepal ovate to triangular, 4-11 × 1.2-2.5 mm, index 3-9, tip long

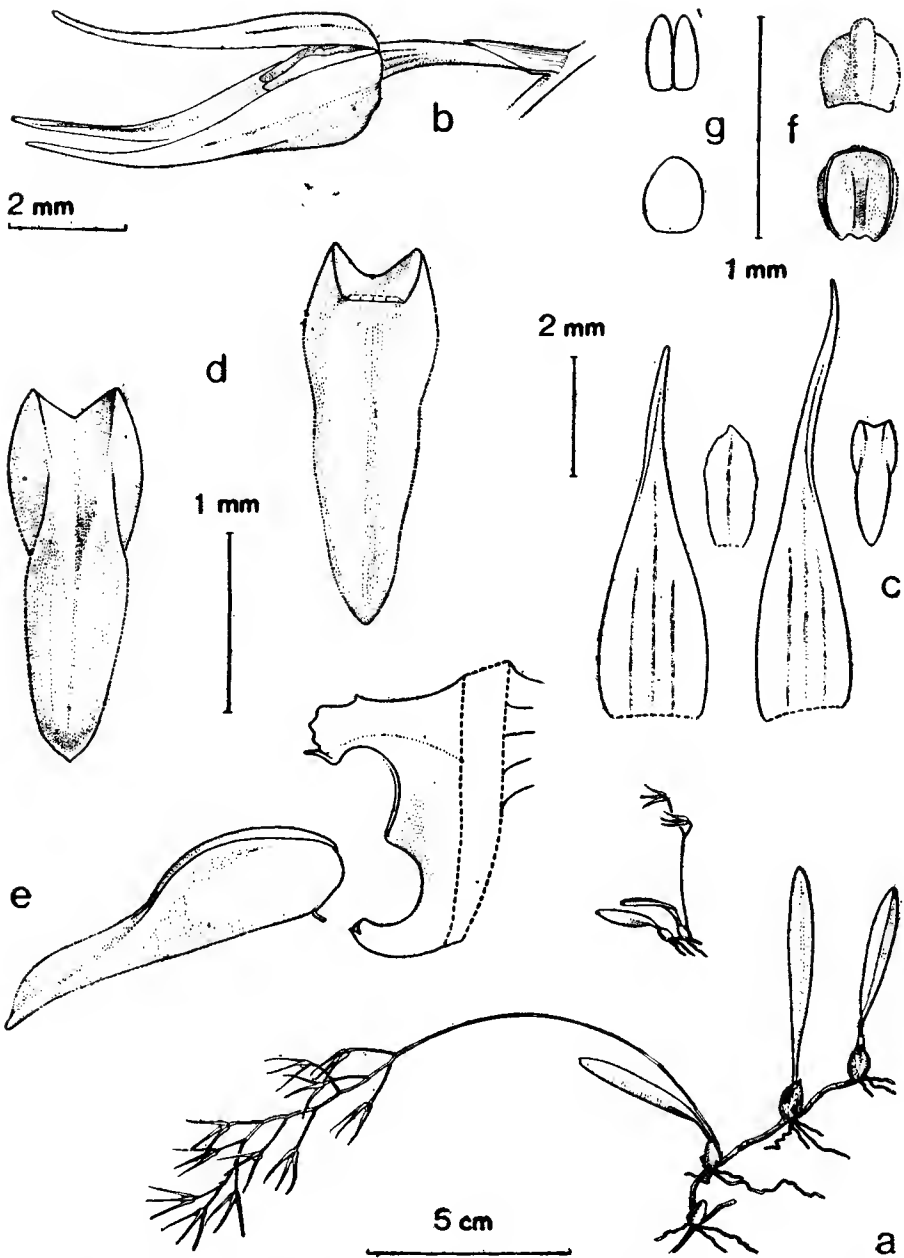
acuminate, rather thin, glabrous. Lateral sepals free; 4-14 × 1.4-2.5 mm, index 2.6-10, otherwise as the median sepal. Petals oblique, elliptic to obovate, 1.2-3.5 × 0.5-1 mm, index 2-3.9, tip obtuse to acute, margins glabrous to erose, thin, surface glabrous. Lip straight or slightly curved, general outline ovate, more or less divided into a basal part which is semi-circular or semi-elliptic in lateral view and which cannot be spread out entirely, and a narrow, flat or slightly convex top part, 1.8-3 × 0.5-0.8 mm, index 2.3-4.2 (not spread), tip obtuse to acute, rather thin, solid, glabrous, adaxially slightly concave in the basal part, with 2 inconspicuous ridges converging in front approx. half way; abaxially without a median ridge. Column from ovary to the tip of the stelidia 0.5-1 mm; stigma protruding at its base, elliptic; column-foot without accessories. Stelidia inconspicuous, triangular, tip rounded to acute, upper margin erose. Anther abaxially with a ridge, front margin not protruding. Pollinia 2.

Colours: Pseudobulbs often stained with purple. Sepals and petals yellowish or creamy white, sometimes suffused with pink or purple, or entirely purple. Lip yellowish or white, sometimes with a purple blotch near the base, or entirely dark purple.

Ecology: Epiphyte in primary and secondary forests. Also found on isolated trees in grassland. Alt. 2200-3200m. Flowering observed in January, May, September, October.

Distribution: INDONESIA. Irian Jaya. Near Lake Habbema (*Brass* 10253A, 10713, 11304). PAPUA NEW GUINEA. Eastern Highl. Prov., Kegsugl [*ANU* 7578 (Wade)]; Mt. Gahavisuka (*Cruttwell* 3217,

J. J. Vermeulen



2 *Bulbopyllum phormion* a-whole plant; b-flower; c-flower analysis, from left to right: median sepal, petal, lateral sepal, lip, d-lip, left: adaxially, right: abaxially, e-column and lip, lateral view; f-anther, above: abaxially, below: adaxially; g-pollinia, above: a pair, below: single. (All drawn from the type specimen, except a, lower plant from Brass 11304).

New species of *Bulbophyllum*

3268), Kogoraipa (Cruttwell 3225), Mt. Otto [NGF 47038 (Noble & Johns)]. Chimbu Prov., Gembogl (Sterly 1707). Western Highl. Prov., Tomba (Cruttwell 3180, Reeve 6220, 6222, 6229); Kubor Range (Pullen 5373). Southern Highl. Prov., Tari (Schuiteman, Mulder & Vogel 37).

Notes: *B. phormion* is most similar to *B. dendrochiloides* Schltr. Both have lips which, in lateral view, are generally more or less divided into a high and wide basal part, tapering into a much narrower and thinner top part.

In *B. dendrochiloides* the lip is rather thin but solid (often brown in herbarium material), and the basal part can be flattened entirely, with two rounded wings then sticking out laterally, and no ridge of tissue remaining abaxially. In *B. phormion* the lip is thick but very soft and of a spongy texture (often almost transparent in herbarium material), and the basal part can not be spread out either without deeply tearing the adaxial surface of the lip, or without a thick ridge of tissue remaining abaxially.

Bulbophyllum pidacanthum J. J. Vermeulen, *spec. nov.* **Fig. 3**

Rhizoma patente bracteis imbricatis, labello attenuato insigne.—Typus: Rees & Reeve 327 (K).

Rhizome patent or more or less pendulous, up to 12 cm long, 2-3 mm diam.; all rhizome scales longer than the internodes. Roots mostly close to the base of the rhizome. Pseudobulbs ovoid, 0.6-2 cm apart, 1.5 - 2.5 × 0.4 - 0.6 cm moderately flattened. Petiole 4-7 mm long. Leaf blade elliptic, 5-5.5 × 1.1-1.2 cm, index 4-5, tip acute. Inflorescence

14-19 cm, 20-75-flowered. Peduncle 5-7.5 cm; bracts 3-4, the longest 5-12 mm. Rhachis arching, more or less pendulous, 9-21 cm. Floral bracts ovate, 2-5 mm, tip acute to acuminate. Pedicel and ovary 8-25 mm, with the articulation 1-4 mm from the floral bract. Flowers moderately opening. Median sepal ovate, 11.5-17 × 1.5-2.2 mm, index 6.5-8.5, tip long-acuminate to caudate; rather thin, glabrous; lateral sepals free, oblique, 14.5-21 × 1.5-2.2 mm, index 7-14, otherwise as the median sepal. Petals oblique, ovate to elliptic, 1.3-1.8 × 1-1.6 mm, index 1.1-1.7, tip obtuse; otherwise as the median sepal. Lip slightly curved, general outline ovate, consisting of a wider basal part and a narrow, linear top part, 1.7-2 × 0.7-0.9 mm, index 2-2.6 (not spread), tip obtuse, margins and surface glabrous to papillose, rather thick, adaxially moderately concave near the base, with 2 ridges converging in front in the basal half, abaxially with a truncate median ridge. Column from ovary to the tip of the stamens 0.8-1.3 mm; stigma protruding at its base, approx. orbicular; column-foot without accessories. Stamens triangular, 0.2-0.3 mm, tip acute with a distinct, deltoid, rounded to acute wing along the lower margin. Anther abaxially with a ridge, front margin protruding. Pollinia 2.

Colours: Leaves often suffused with purple. Sepals pale greenish, cream-coloured or white. Petals, lip and column white, or suffused with purple.

Ecology: Epiphyte in primary forest, also in more open vegetation. Alt. 1600-2600 m. Flowering observed in April, August and November.

Distribution: INDONESIA. Irian Jaya. Central Mts., Swart Valley (*Daggy*

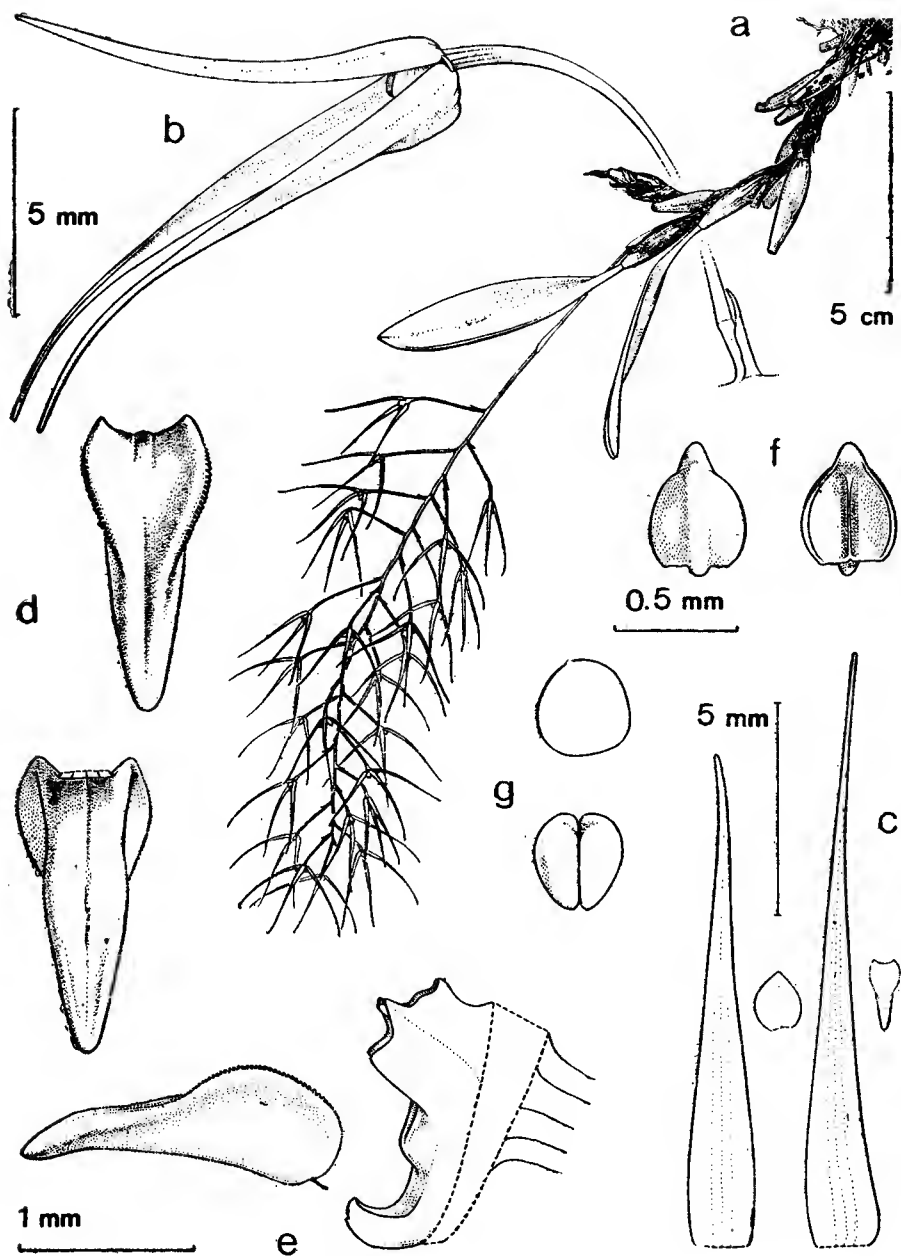


Fig. 3 *Bulbophyllum pidacanthum* a-whole plant, b-flower, c-flower analysis, from left to right: median sepal, petal, lateral sepal, lip, d-lip, above: adaxially, below abaxially, e-column and lip, lateral view, f-anther, left: abaxially, below: adaxially, g-pollinia, above: single, below, a pair. (All drawn from the type specimen).

New species of *Bulbophyllum*

Bergman 843). PAPUA NEW GUINEA. Central Prov., Woitape (*Milla* 1293). Western Highl. Prov., Laiagam (*Rees & Reeve* 327); Taronga (*Reeve* 1665).

Notes: Vegetatively this species is characterized by its sturdy, patent rhizomes. It shares this character with *B. scopia* J. J. Vermeulen. It differs from that species in the narrower sepals as well as in the outline of the lip, which is distinctly narrowed towards its tip.

Bulbophyllum imitator J. J. Vermeulen, *spec. nov.* **Fig. 4**

Ab omnibus speciebus sectione *Macrouris* labello recurvo, stigma non exserta, inflorescentia 4-6-flora differt. -Typus: LAE 67057 (Vinas & Waikabu) (Holo AMES, iso CANB, K, L).

Rhizome patent or pendulous with more or less patent branches up to c. 60 cm long, 1.5-3 mm diam.; rhizome scales of the longest internodes slightly shorter than or as long as those interarticulations. Roots mostly close to the base of the rhizome. Pseudobulbs ovoid, 0.5-1.3 cm apart, 0.6-2.2 × 0.3-0.6 cm, not flattened. Petiole 1-5 mm long. Leaf blade ovate to elliptic, 2.2-7 × 0.5-1.4 cm., index 4.4-6, tip obtuse to acute. Inflorescence 1.1-3 cm, 4-6-flowered. Peduncle 0.5-1.5 cm; bracts c. 3, the longest 3.5-5.5 mm. Rhachis approx. erect, 0.5-1.5 cm. Floral bracts 3-5 mm, ovate, acute. Pedicel and ovary 2.5-3.5 mm, with the articulation 0.7-0.8 mm from the floral bract. Flowers open simultaneously, moderately opening. Median sepal ovate to elliptic, 5-6 × 2.2-2.3 mm, index 2-2.7, tip obtuse to acute, thin, glabrous. Lateral sepals free, oblique, ovate, acute, 5.2-6 × 2-2.7 mm, index 2-3, tip thin, glabrous. Petals oblique, elliptic to obovate, tip obtuse,

2-2.2 × 1.5-1.1 mm, index c. 1.2, margins glabrous to finely papillose, thin, surface glabrous. Lip distinctly curved, general outline ovate, tip obtuse, 1.5-1.8 × 1.2 mm, index c. 1.5 (not spread), thick, glabrous, adaxially distinctly concave, with 2 distinct ridges approx. parallel to the margins, abaxially with a retuse median ridge. Column from ovary to the tip of the stelia 0.9-1 mm, stigma not protruding at its base, slit-like; column-foot without accessories. Stelia triangular, tip acute with a small, obtuse tooth along the upper as well as the lower margin, close to the tip. Anther abaxially with a ridge towards its base, front margin not protruding. Pollinia 4, the inner pair c. half as long as the outer pair.

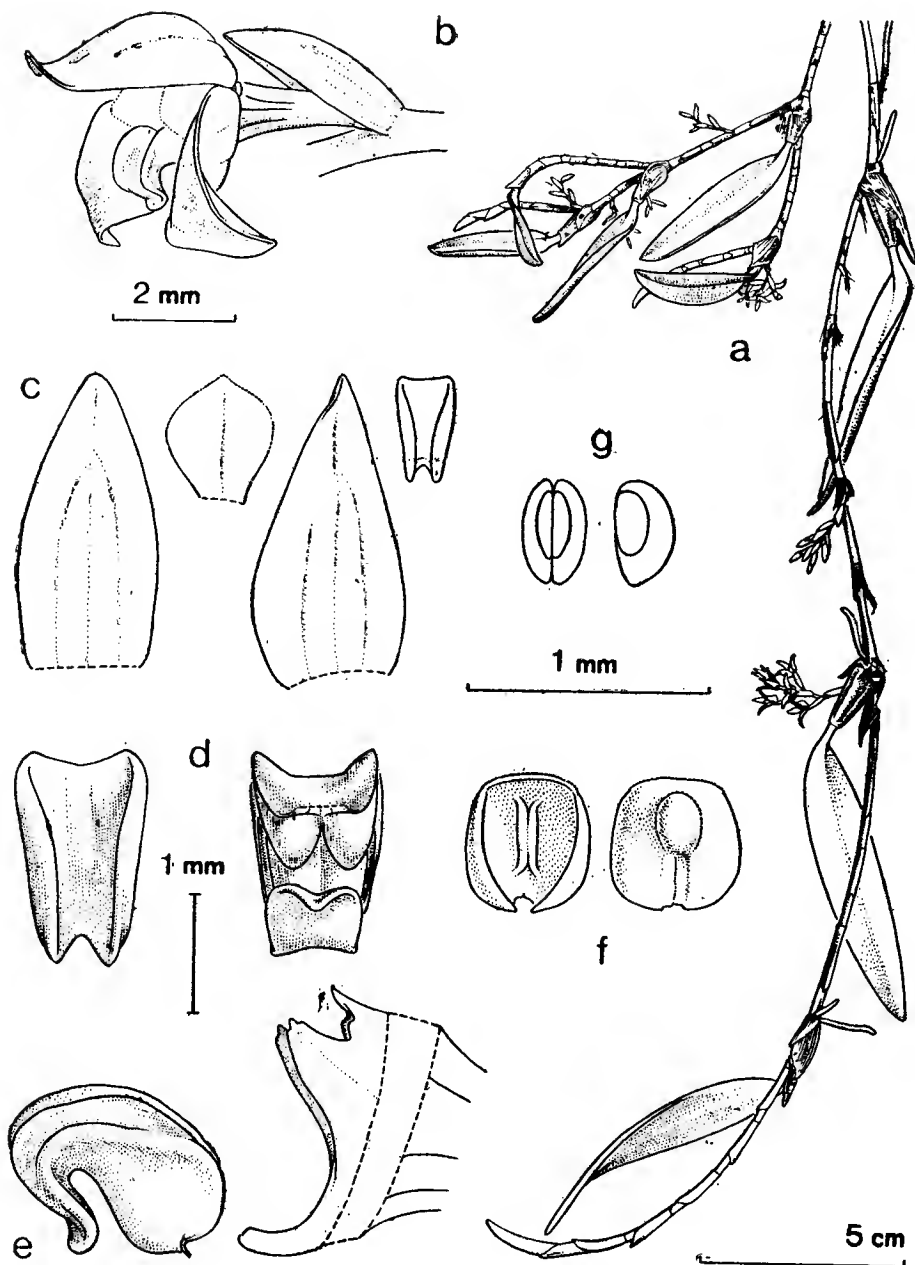
Colours: Pseudobulbs and leaves often suffused with purple. Pedicels purple, flowers mainly yellow.

Ecology: Epiphyte in primary forest. Alt. 2800-3000 m. Flowering observed in January, April.

Distribution: PAPUA NEW GUINEA. Morobe Prov., near Garaina (*Hartley* 12742). West Sepik Prov., near Mt. Capella [LAE 67057 (Vinas & Waikabu)].

Notes: Vegetatively *B. imitator* can hardly be distinguished from *B. ochroleucum* Schltr. (Sect. *Uncifera*, hence the epithet 'imitator'). It differs from that species in the shape of the lip, which has two ridges along the margins, as well as in the stelia which lack the downwardly pointing teeth along their lower margin.

Within sect. *Macrouris* this is distinguished by the base of the stigma which does not protrude from the face of the



g. 4 *Bulbophyllum imitator* a-whole plant, b-flower, c-flower analysis, from left to right: median sepal, petal, lateral sepal, lip, d-lip, left: adaxially, right: abaxially, e-column and lip, lateral view, f-anther, left: adaxially, right: abaxially, g-pollinia, left: two pairs, right: a single pair. (All drawn from the type specimen, except a, right hand plant from Hartley 12742).

New species of *Bulbophyllum*

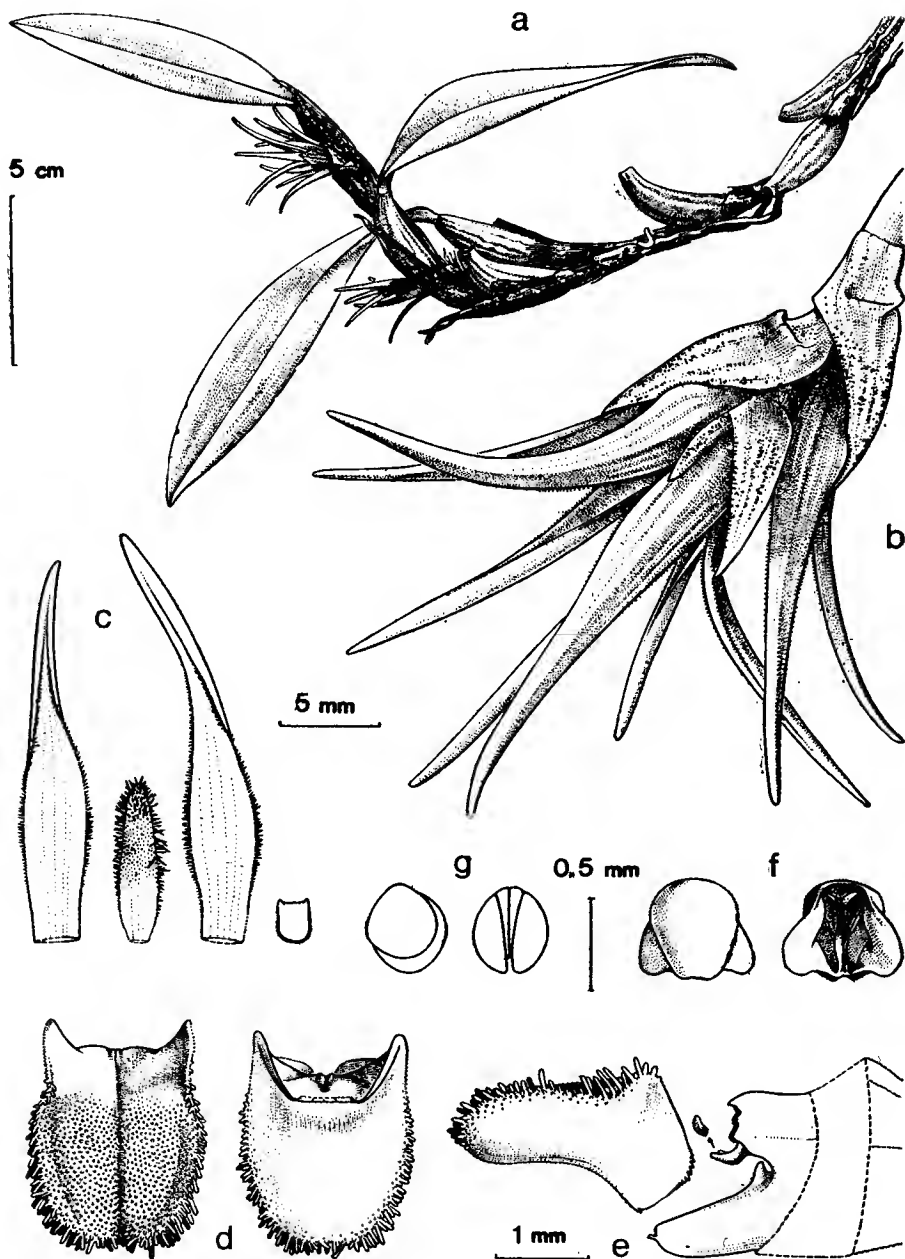


Fig. 5 *Bulbophyllum ankylorhinon* a-whole plant; b-inflorescence; c-flower analysis, from left to right: median sepal, petal, lateral sepal, lip, d-lip, left, adaxially, right, abaxially; e-column and lip, lateral view; f-anther, left: abaxially, right, adaxially; g-pollinia, left, single pair, right, two pairs. (All drawn from the type specimen).

column, the 4 - 6 flowered inflorescences and the curved lip.

Sect. **Pelma** (Finet) Schltr.

Bulbophyllum ankylorhinon J. J. Vermeulen, *spec. nov.* **Fig. 5**

Ab omnibus speciebus sectione *Pelma* petalis ciliatis differt. -Type: *Jongejan* 1287 (L).

Rhizome patent to pendulous, up to 60 cm long, 4-5 mm diam. Pseudobulbs ovoid to ellipsoid, 2-8 cm apart, $2.5-4 \times 0.8-1$ cm, somewhat flattened. Petiole 3-6 mm. Leaf blade elliptic, tip (sub-) acute. 2 cm, index 4.7-10, $6.5-18 \times 1.3-2$ cm. Inflorescence c. 3 cm, 3-5-flowered. Peduncle c. 0.7 cm; bracts c. 3, longest c. 7 mm. Rhachis 0.8-1.4 cm. Floral bracts triangular 12-15 mm, tip acute. Pedicel and ovary 4.5-5 mm, with the node 0.2 mm from the floral bract. Flowers moderately opening. Median sepal ovate, tip acute, $21-32 \times 3.5-3.8$ mm, index 5.5-7, margins distinctly ciliate, rather thick, adaxially finely papillose except at the base, abaxially glabrous. Lateral sepals free, $22-32 \times 3.8-4$ mm, index 5.5-7; otherwise as the median sepal. Petals $7-9 \times 1.8-2.5$ mm, index 3.5-5, tip obtuse, margins with coarse, elongated papillae, adaxially glabrous at the base, coarsely papillose-ciliate at the tip and finely papillose in between, otherwise as the median sepal. Lip slightly curved, general outline approximately elliptic, $2-2.5 \times 1.5-2$ mm, index 1.2-1.3

(not spread), tip rounded, margins with coarse, elongated papillae, very thick, adaxially without a basal concavity, without basal teeth, basal part of the lip moderately concave, slightly papillose, passing with a transverse edge or ridge into the top part of the lip, top part slightly convex, with a median furrow, papillose, abaxially without a median ridge, surface approx glabrous. Column from ovary to the tip of the rostellum c. 1 mm; rostellum distinctly protruding. stigma a transverse slit with a distinct, obtuse central tooth at its base; column-foot approximately without accessories; Stelidia inconspicuous, triangular, tip acute. Anther abaxially with a ridge, front margin not protruding.

Colours: sepals and petals white or creamy yellow. Lip orange or red.

Ecology: Epiphyte in primary forest. Alt. 1700-200 m. Flowering observed in May, September.

Distribution: PAPUA NEW GUINEA. Morobe Prov., Bubu Valley (*Reeve* 5123); Yanem R. (*Clemens* 12221). Eastern Highl. Prov., Bena (*Jongejan* 1287).

Notes: Among the species of sect. *Pelma*, this species is well characterized by the coarse, elongate papillae along the margins of the petals and the lip, as well as by its large flowers. It is most similar to *B. colliferum* J. J. Smith.

The name refers to the protruding, bent rostellum: *ankylos*, means crooked, and *rhis*, nose.

